EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	7	cptcm	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:18
L2	29546	vibrat$4 near2 (sensor acceler$7)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 13:48
L3	1720922	(analog adj2 digital) digit$5 "a/d"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:21
L4	3723	inphase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:21
L5	85626	quadrature	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:22
L6	1	2 same 3 same 4 same 5	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:23
L7	1	2 and (3 same 4 same 5)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:26
L8	2012246	phase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:26
L9	1016158	amplitude magnitude	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:27
L10	28892	8 same 9 same 3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 11:28
L11	59	10 same 2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 12:36

L12	59	10 same 2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 12:36
L13	14	("4213346" | "4380172" | "4408294" | "4426641" | "4453407" | "4488240" | "4635210" | "4751657" | "4988979" | "5258923" | "5412583" | "5412985" | "5533400" | "5635642").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/04/04 12:46
L14	1	("5089969").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/04/04 12:50
L15	11	("5412985").URPN.	USPAT	OR	ON	2007/04/04 12:50
L16	26	("3895343" | "4352293" | "4885724" | "4894644" | "5109700" | "5216921" | "5407265" | "5412985" | "5477730" | "5511422" | "5571966" | "5579232" | "5633811" | "5686669" | "5687735" | "5808903" | "5847658" | "5852793" | "5854994" | "5943634" | "5995910" | "6199018" | "6260004" | "6275781" | "6301572" | "6321602").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/04/04 13:04
L17	0	("6868348").URPN.	USPAT	OR	ON	2007/04/04 13:04
L18	0	("6868348").URPN.	USPAT	OR	ON	2007/04/04 13:25
L19	26	("3895343" | "4352293" | "4885724" | "4894644" | "5109700" | "5216921" | "5407265" | "5412985" | "5477730" | "5511422" | "5571966" | "5579232" | "5633811" | "5686669" | "5687735" | "5808903" | "5847658" | "5852793" | "5854994" | "5943634" | "5995910" | "6199018" | "6260004" | "6275781" | "6301572" | "6321602").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/04/04 13:25
L20	8	("6456945").URPN.	USPAT	OR	ON	2007/04/04 13:29
L21	0	("7168324").URPN.	USPAT	OR	ON	2007/04/04 13:36
L22	2	vibrat$6 same 3 same 4 same 5	USPAT	OR	ON	2007/04/04 13:38
L23	9	vibrat$6 same 3 same hilbert	USPAT	OR	ON	2007/04/04 13:38
L24	35251	vibrat$4 near2 (sens$4 acceler$7)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 13:49
L25	25	4 and 24 and 5 and 3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 14:44

L26	2	"5893054".pn. and phase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:08
L27	2415	phase same 24	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:08
L28	184	27 same 3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:12
L29	17	28.clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:09
L30	845	27 and 3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:13
L31	713	30 and 9	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:13
L32	103590	sinusoid$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:13
L33	209001	31 nd 32	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:13
L34	216	31 and 32	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:14
L35	65	5 and 34	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/04/04 16:14

Summary of Invention Paragraph - BSTX (10):

[0009] In one aspect, the system includes a **vibration sensor for measuring the vibration** of a rotor, a speed sensor for measuring the rotational speed and **phase** angle of the rotor, a filter coupled to both the speed **sensor and vibration sensor,** and a signal processor coupled to the filter and speed sensor. The filter, which can be a **digital** filter, extracts a signal from the vibration measurement having a frequency synchronous with the rotation of the rotor. The processor is programmed to subtract a background (or baseline) vibration signal from the synchronous vibration signal to produce a vibration difference signal. Each vibration signal exists in two separate parts, the vibration **amplitude,** and the vibration **phase** angle. These two separate parts are often combined for mathematical convenience as a "vector" (which in this context means a quantity with both **magnitude** and direction). The processor then measures and evaluates the vector representation of the vibration difference signal to determine if an anomaly, such as a crack, has developed.

PAT-NO: JP357017027A

DOCUMENT-IDENTIFIER: JP 57017027 A

TITLE: VIBRATION REDUCING DEVICE OF ELECTRIC MACHINERY

PUBN-DATE: January 28, 1982

INVENTOR-INFORMATION:

NAME   **COUNTRY**

HORI, YASURO

KANAI, MINORU

KIYONO, KAZUYUKI

HAGIWARA, SHUYA

ASSIGNEE-INFORMATION:

NAME   **COUNTRY**

HITACHI LTD N/A

APPL-NO: JP55089979

APPL-DATE: July 3, 1980

INT-CL (IPC): G05D019/02 , F16F015/18 , H01F027/33

US-CL-CURRENT: 318/460 , 702/77 , 702/FOR.168

ABSTRACT:

PURPOSE: To reduce the noise caused by vibrations through an easy control and with a high accuracy, by detecting the vibrations of a transformer, a motor or the like to give a digital process to the detected vibration and producing the vibration reducing frequency signal with amplification and vibration given to said frequency signal.

CONSTITUTION: The vibrations caused from an electric machinery 1 like a transformer or the like are detected by a sensor 2A. The analog detection time signal detected by the sensor 2A receives an **A/D** conversion and is then converted into a **digital** detection frequency signal by a Fourier converter 5. A controller 6 obtains

both the **amplitude and the phase** quantity with every frequency and
sends them to a Fourier adverse converter 7 in the form of the
digital vibration reducing frequency signal. The converted **digital**
vibration reducing time signal receives a D/A conversion 8 to
energize an exciter 10 after an electric power amplification 9. The
power supply frequency of the machinery 1 or the signal detected by a
vibration sensor 2B is used for the input of a synchronous signal
generator 12 that samples the converters 4 and 8.

See image for Certificate of Correction

TITLE: Method and apparatus for measuring rotor
                       unbalance

Brief Summary Text - BSTX (10):

In one aspect, the system includes a **vibration sensor for measuring the vibration** of a rotor, a speed sensor for measuring the rotational speed and **phase** angle of the rotor, a filter coupled to both the speed **sensor and vibration sensor,** and a signal processor coupled to the filter and speed sensor. The filter, which can be a **digital** filter, extracts a signal from the vibration measurement having a frequency synchronous with the rotation of the rotor. The processor is programmed to subtract a background (or baseline) vibration signal from the synchronous vibration signal to produce a vibration difference signal. Each vibration signal exists in two separate parts, the vibration **amplitude,** and the vibration **phase** angle. These two separate parts are often combined for mathematical convenience as a "vector" (which in this context means a quantity with both **magnitude** and direction). The processor then measures and evaluates the vector representation of the vibration difference signal to determine if an anomaly, such as a crack, has developed.